## REMARKS

Reconsideration of the rejection of claims 1-4 of this application is requested.

### Status of Claims

Claims 1-4 are presented for consideration on their merits. Claim 1, the only independent claim of the claims under consideration on their merits, has been amended substantially.

### The Drawing

The drawing has been indicated as acceptable as filed.

### Related Patent Applications

This application is a division of application Serial No. 027067, filed December 20, 2001, now US Patent No. 6,735,985, issued May 18, 2004. This is believed to be especially relevant to this prosecution since claims 1-4 in this application are directed to the product of the method of the claims that issued in the parent application. The pure manipulative step in the claims in the parent application, i.e. twisting an optical fiber as it is drawn, was known in the art prior to the parent application. The patentable features of the claims in the parent application are the subject of the twisting, i.e. the characteristics of the optical fiber being twisted. Those features are now recited in claims 1-4 as amended. Thus claims 1-4 as amended are believed to be per se patentable.

**Rejections**

The rejections that are of record and intended to be responded to in this paper are:

Claims 1-4 stand rejected under 103(a) as unpatentable over Geertman.

**Argument**

Prior to addressing the rejection a brief summary of the invention may be helpful.

The invention is directed to reducing differential mode delay (DMD) in a multimode optical fiber. A multimode optical fiber is defined, as is well known, by a large core diameter, greater than 30 microns. This is both quantitatively and qualitatively substantially different from a single mode optical fiber, with a core diameter of typically less than 10 microns.

The Examiner has cited the relevant prior art, and that art traces the evolution of the technology of twisting optical fibers. The common thread in the evolution is the step of twisting an optical fiber as it is drawn. The main variable in the evolution is what is twisted and why. The first reference to twisting is the Hart patent. It recognized that polarization mode dispersion PMD in single mode optical fibers can be reduced by twisting the optical fiber. Onishi et al. made similar observations. DiGiovanni then recognized that multimode optical fibers that suffered DMD due to defects in the core (ovality) could be improved by twisting the deformed fiber. That discovery was based on the geometry of the core. When one mode in an optical fiber traverses a longer path than another mode, due to the presence of an oval

core, DMD results. DiGiovanni discovered that by twisting the defective core, the path length for different modes averages out to approximately equal. Obviously this effect relies on the existence of multiple modes, i.e. a multimode fiber.

At this stage in the art, there was no obvious benefit to twisting a multimode optical fiber if it had a normal (circular) core. It is at this point that Digiovanni recognizes yet another new effect. That is: improved performance of a multimode optical fiber that does not have a defective core. The improvement evidently results from addressing inhomogeneities in the core material. Thus the combination of twisting a multimode fiber with a geometrically normal cross section is the basis for this invention.

The Geertman patent relates to a single mode fiber, and, as the patent states, addresses the same aspect of single mode optical fiber technology as the Hart patent.

In view of the amendments and arguments, reconsideration and allowance of claims 1-4 is requested.

Should the Examiner wish to discuss this matter he is invited to call the undersigned at 757-258-9018.

Respectfully,

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